

- 12 -

REMARKS1. Status of the Claims

Claims 1-46 were originally filed in the present application. Claims 2 and 30 were canceled without prejudice or disclaimer in a Response mailed December 17, 2004. Claims 47-50 were added in the Response mailed December 17, 2004. Claims 51-61 are added hereinabove. Claims 23 and 24 were rejoined into the application by the Examiner as noted in the present Office Action mailed March 4, 2005 (herein after the "Action").

Accordingly, claims 1, 3-29, and 31-61 are currently pending in the present application. Claims 29, 31-36, 38-42, and 47-49 are allowed according to Action. Reconsideration of the present application is respectfully requested in view of the amendments above and the remarks below.

2. Amendments to the Claims

The amendments to the claims, above, are to better describe the invention of the present application as taught by the specification. The amendments introduce no new matter. Support for the amendments to claims 1 and 29 is found in the specification as follows. The "R" nucleotide in the claimed formula for the catalytic DNA molecule is depicted as part of the first substrate binding region in Figure 10 wherein the "R" nucleotide binds through complementary base pairing to a "Y" (pyrimidine) nucleotide. Also, page 88, lines 1-4 of the specification teach that the catalytic core of the "10-23" molecule is 15 nucleotides in length which 15 nucleotides are clearly indicated in Figure 10 to be 5'-GGCTAGCTACAACGA-3' (residues 2-16 of SEQ ID NO:121). Accordingly, claims 1 and 29

- 13 -

are amended herein to reflect that the "R" nucleotide is at the 3' end of the first substrate binding region.

Claims 1 and 29 are also amended to reflect teachings in the specification that the "R" nucleotide in the claimed catalytic DNA molecule is capable of forming a base pair with a pyrimidine in the preselected substrate nucleic acid sequence (see, e.g., page 91, lines 26-28; and Figure 10).

Claims 3 and 31 are amended to correct the antecedent basis of the claimed formula in view of the amendments to base claims 1 and 29, respectively. Claims 3 and 31 are also amended to properly recite the claimed nucleotide sequence identifier because of the amendments to claims 1 and 29.

Claims 1, 7, 25, and 34 are amended to replace the terms "has" or "having" with "comprises" or "comprising", respectively, in order to more clearly indicate that the related claim elements are open-ended.

Claims 10 and 37 are amended to correct obvious typographical errors, which amendments introduce no new matter.

Claims 11 and 38 are amended to correct obvious typographical errors, which amendments introduce no new matter.

Claim 25, line 5 is amended to insert the word "complementary" into the phrase "comprising a preselected substrate nucleic acid sequence complementary to said first and second substrate binding regions". The insertions of the term "complementary" into claim 25, line 5 does not add new matter because it is clear that a word was missing from the claim as originally filed and because reference back to claim 1 demonstrates that the missing word is "complementary".

Claim 25 is further amended to relate the claimed method to in vitro applications as discussed below.

Claims 43, 45, and 50 are amended as discussed below.

New claims 51-61 are added to further define the invention

- 14 -

of the claims from which they depend. No new matter is added. Applicants respectfully submit that new claims 51-61 fall within the invention of the present application because they depend upon independent claims that are within the same restriction group.

3. Claim Rejections Under 35 U.S.C. § 112

A. 35 U.S.C. § 112, First Paragraph

Claims 25-28 are rejected under 35 U.S.C. § 112, first paragraph as allegedly failing to provide enablement for "cleavage of a substrate by introduction of catalytic DNA into a cell where the cell is in an organism [in vivo]".

The present rejection is respectfully traversed. However in view of the amendments to claim 25 above relating the claim to "a method of cleaving a target nucleic acid molecule in vitro", Applicant believes that the present rejection is moot and requests that the Examiner withdraw the rejection of claim 25 and dependent claims 26-28. Applicants do not acquiesce to the reasons for the present rejection and reserve the right to pursue any and all canceled subject matter of the present application in another application. Furthermore, Applicants note that the Examiner states at page 6, lines 10-11 of the Action that, "the specification is enabling for cleavage of a substrate in vitro or in a cell in culture". Applicants respectfully submit that a "cell in culture" is included in the meaning of "in vitro".

B. 35 U.S.C. § 112, Second Paragraph

Claims 10 and 37 are rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. The Examiner alleges that it is not clear how "a phosphorothioate nucleoside residue [can be] on a dipyrimidine". In view of the amendments above to claims 10 and 37, Applicants believe that the present rejection

- 15 -

is moot and request that the rejection be withdrawn.

Claims 43, 45, and 50 and dependent claims 44 and 46 are rejected as allegedly lacking antecedent basis for the limitation "said endonuclease activity". Claims 43, 45, and 50 are amended to correct the antecedent for the phrase "said endonuclease activity". Support for the amendments can be found in claim 29 from which claims 43, 45, and 50 depend; therefore, there is no new matter added by way of the present amendments. In view of the amendments to claims 43, 45, and 50; Applicants respectfully request that the Examiner withdraw the present rejection of claims 43, 45, and 50 and dependent claims 44 and 46.

4. Double Patenting

The Examiner rejected claims 1, 18, and 19 under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claims 22 and 23 of U.S. Patent No. 6,326,174. The Examiner also rejected claims 25-27 under the judicially created doctrine of obviousness-type double patenting as being allegedly unpatentable over claim 67 of U.S. Patent No. 6,326,174.

In view of the Terminal Disclaimer filed herewith, Applicants respectfully request that the double patenting rejections of claims 1, 18, 19, and 25-27 be withdrawn. Applicants do not acquiesce to the reasons for the present rejection and reserve the right to pursue the patentability of any and all subject matter of the present application in another application.

- 16 -

CONCLUSION

No new matter is added by way of the present Response. If there are any additional fees (or overpayments) associated with this Response, or any Response associated with this application, the Director is hereby authorized to charge (or credit) our Deposit Account No. 19-0962.

Respectfully submitted,

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Date

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